

California's Role in the West Coast and Pacific Basin LNG Markets

LNG Asia Pacific 2006 Event

February 13, 2006

Seoul, Korea

Pat Perez, Manager
Special Projects Office
California Energy Commission



Presentation Topics

- California Statistics and Natural Gas Facts
- California's Natural Gas Situation
- California's Natural Gas Outlook
- Why the Interest Lately in Liquefied Natural Gas?
- West Coast LNG Facilities
- California's Energy Policy Priorities
- LNG Permitting in California
- LNG Business Climate



The Island of California?



The “Nation State” of California

- 6th largest economy in the world
- 5th largest consumer of energy in the world
- Consumes 2% of the world's natural gas production
- Average daily natural gas demand: 6 billion cubic feet (10 billion cubic feet per day in winter)
- Population expected to grow from 36 million now to 45 million by 2025



California's Natural Gas Situation

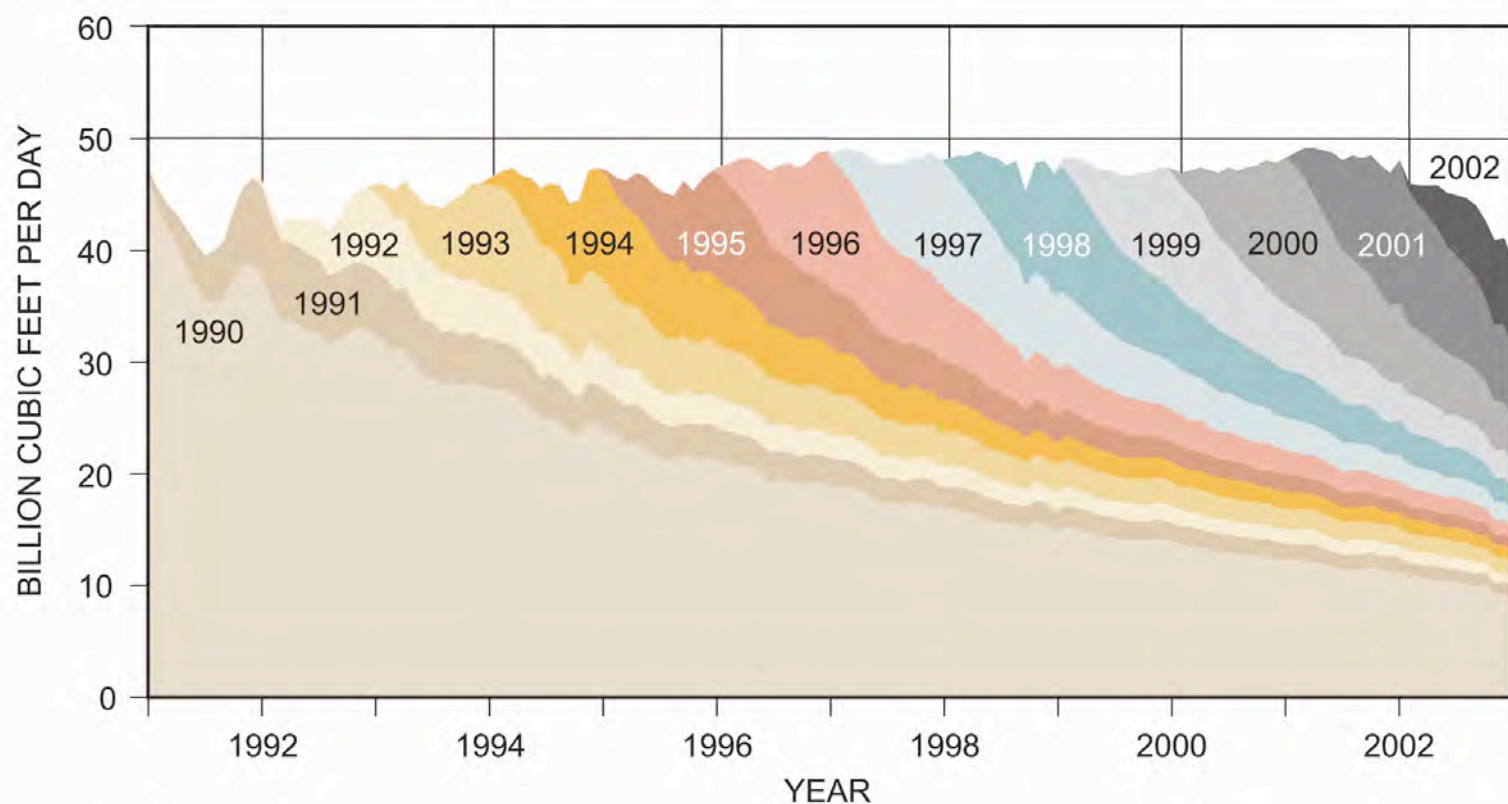
- California imports 87% of its natural gas
- U.S. and Canadian sources expected to decline in the future
- California demand expected to grow
- LNG provides another source of natural gas
- Delivery of gas from a west coast terminal could hedge against supply/price problems in rest of country (e.g., hurricanes)



California Sources of Natural Gas

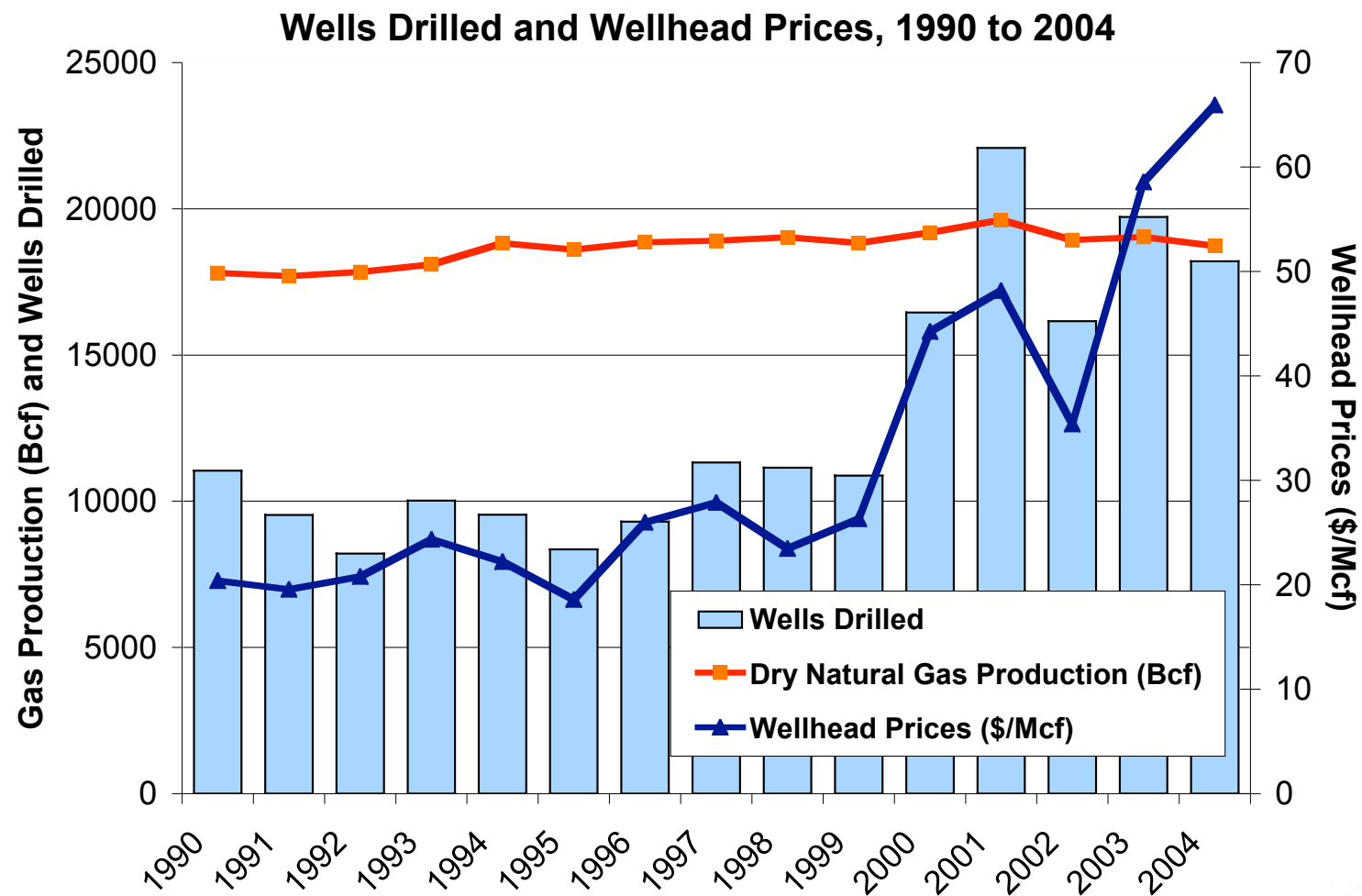


Well Depletion Rates

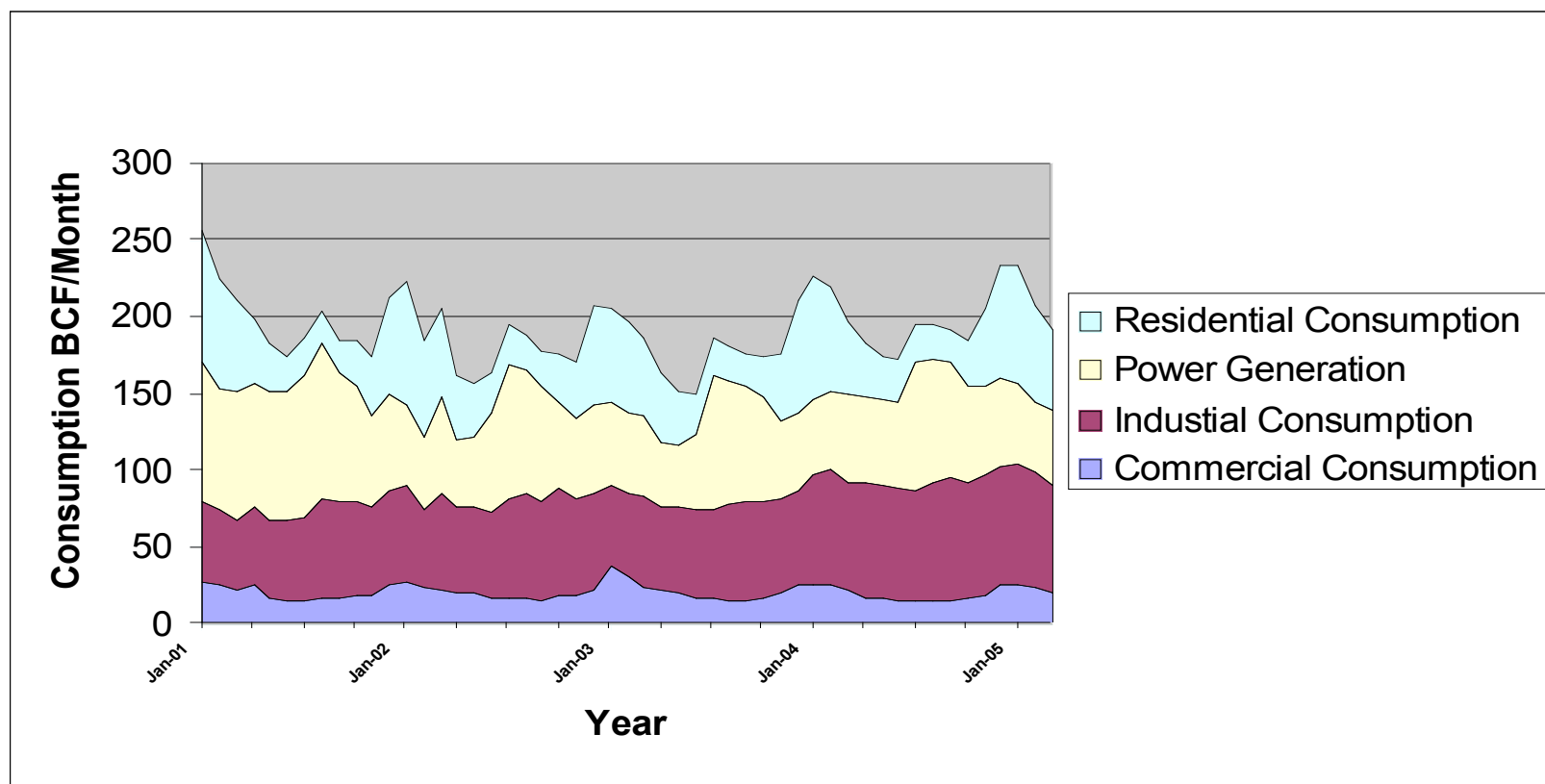


Source: IHS Energy Group.

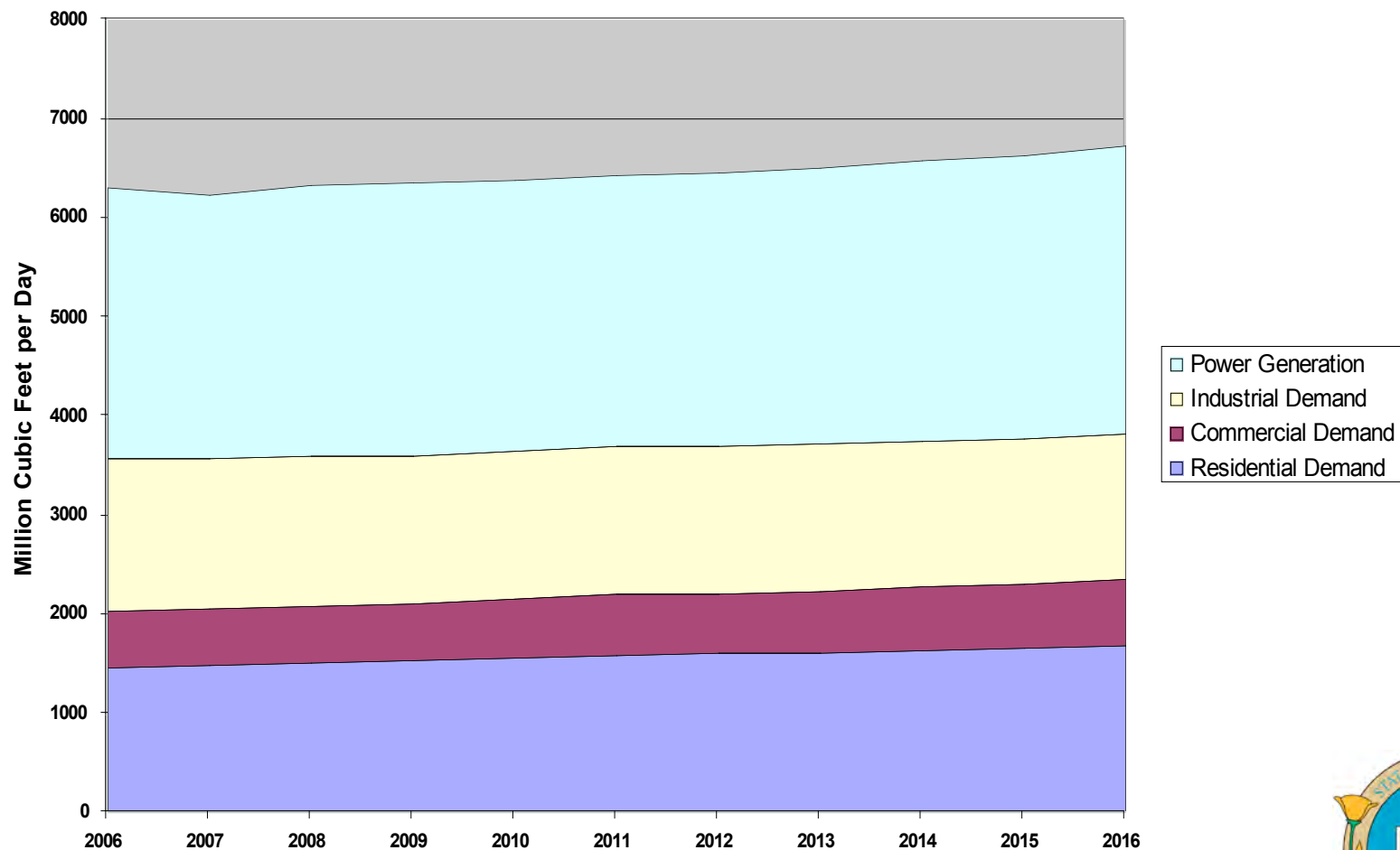




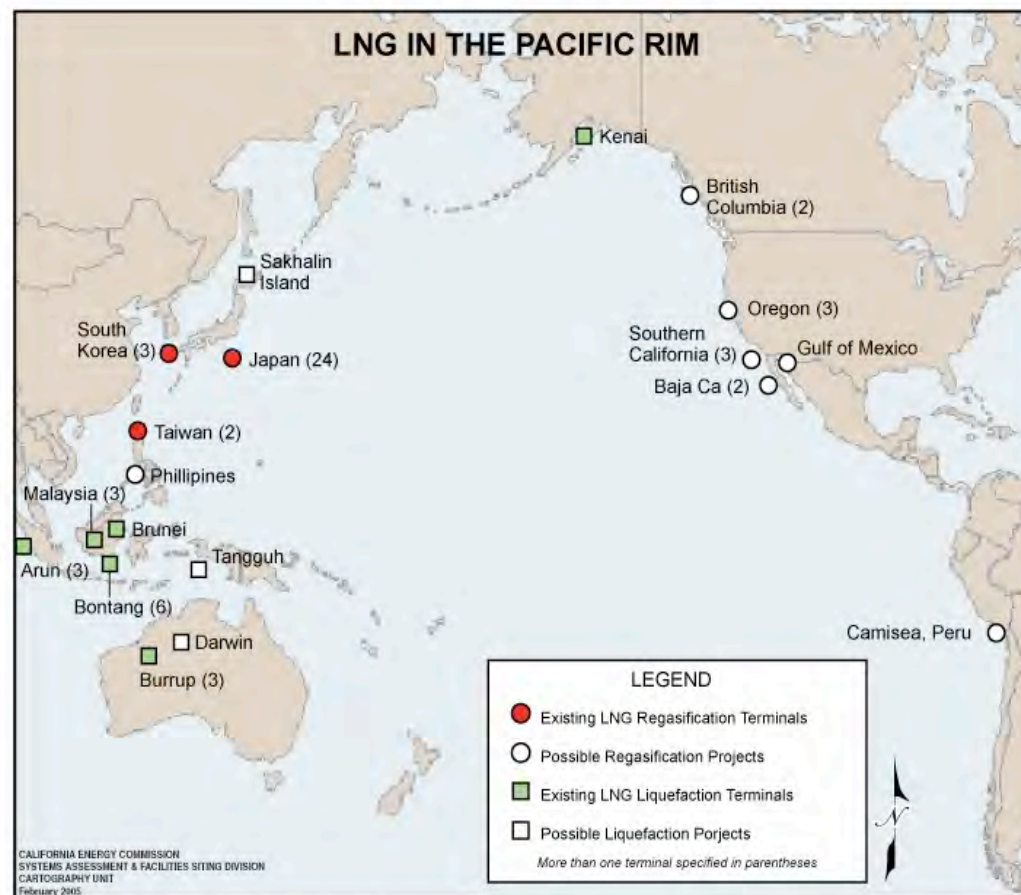
California Natural Gas Consumption



California's Natural Gas Demand

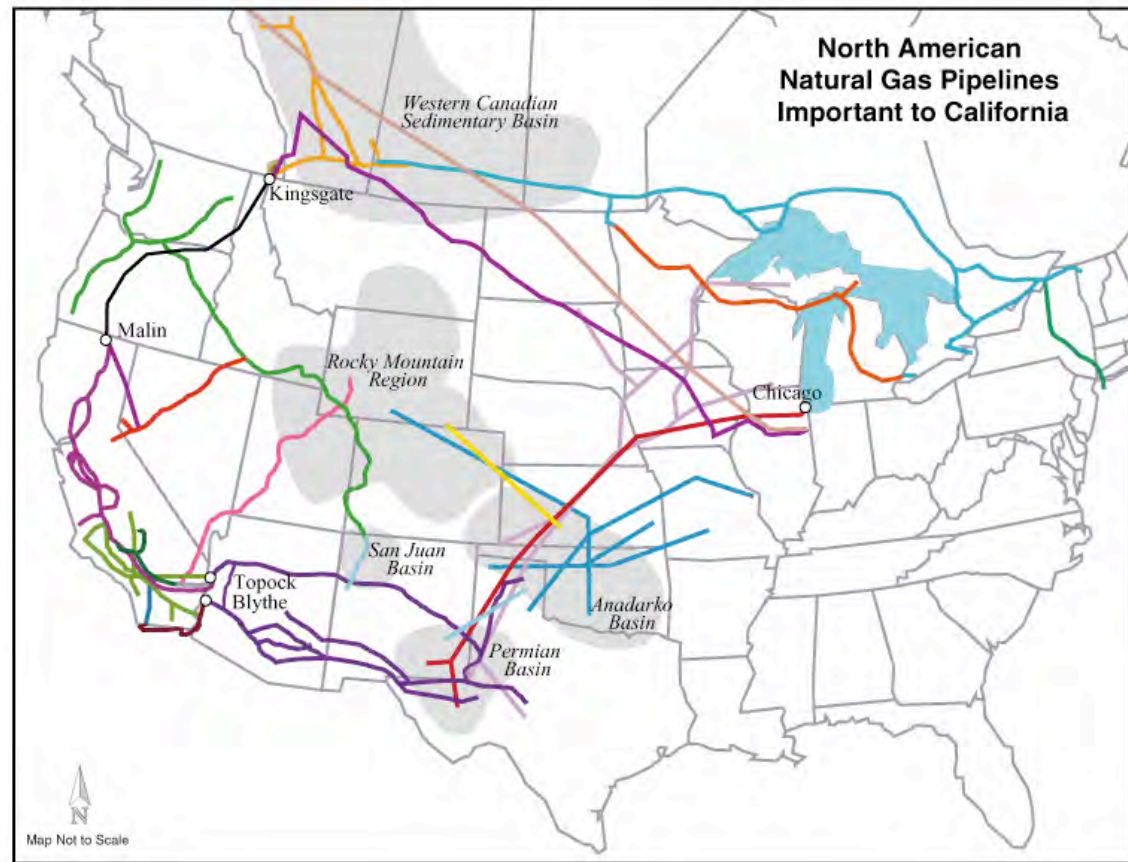


A West Coast LNG Import Terminal would enable California to access Pacific Rim supplies.



Natural Gas Pipelines

**Interstate
pipelines
enable
California to
compete for
the lowest-
cost supplies.**

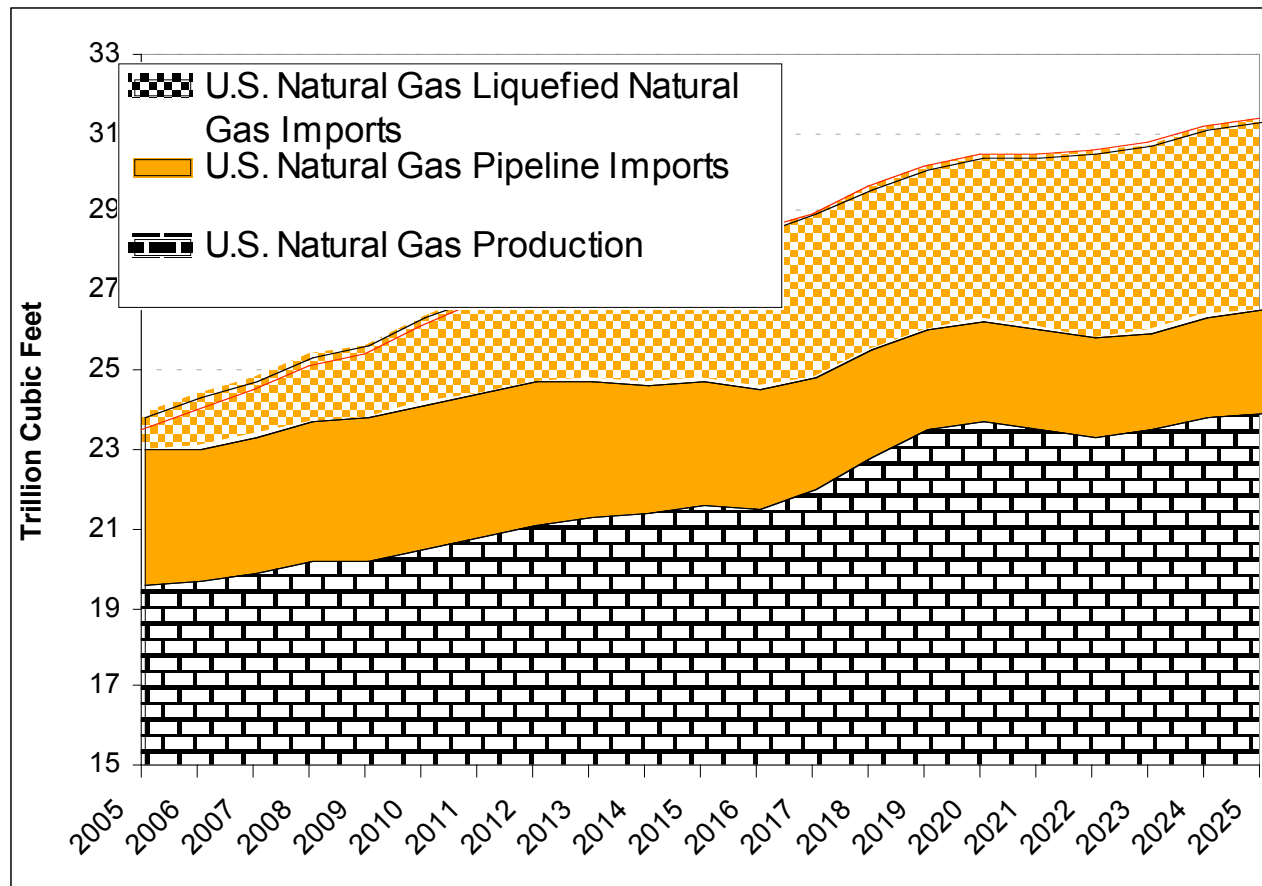


California's Natural Gas Outlook (Good News)

- Current reliability good.
- Recent infrastructure improvements help.
- Current natural gas storage inventories good.
- Broad public energy dialogue more focused on natural gas issues.
- California has aggressive energy efficiency and renewable programs.
- California natural gas research and development program is helping.
- Greater natural gas use has helped “clear the air.”



U.S. Natural Gas Supply Forecast (by U.S. Department of Energy)



California's Natural Gas Outlook (Bad News)

- Natural gas prices are much higher than before.
- Natural gas is the dominant fuel for power plants (up to 50% of generation).
- California imports 87% of its natural gas.
- California is at the end of the pipeline.
- California competes with all other major U.S. markets for natural gas.
- The U.S. long-term supply/demand balance outlook is pessimistic.

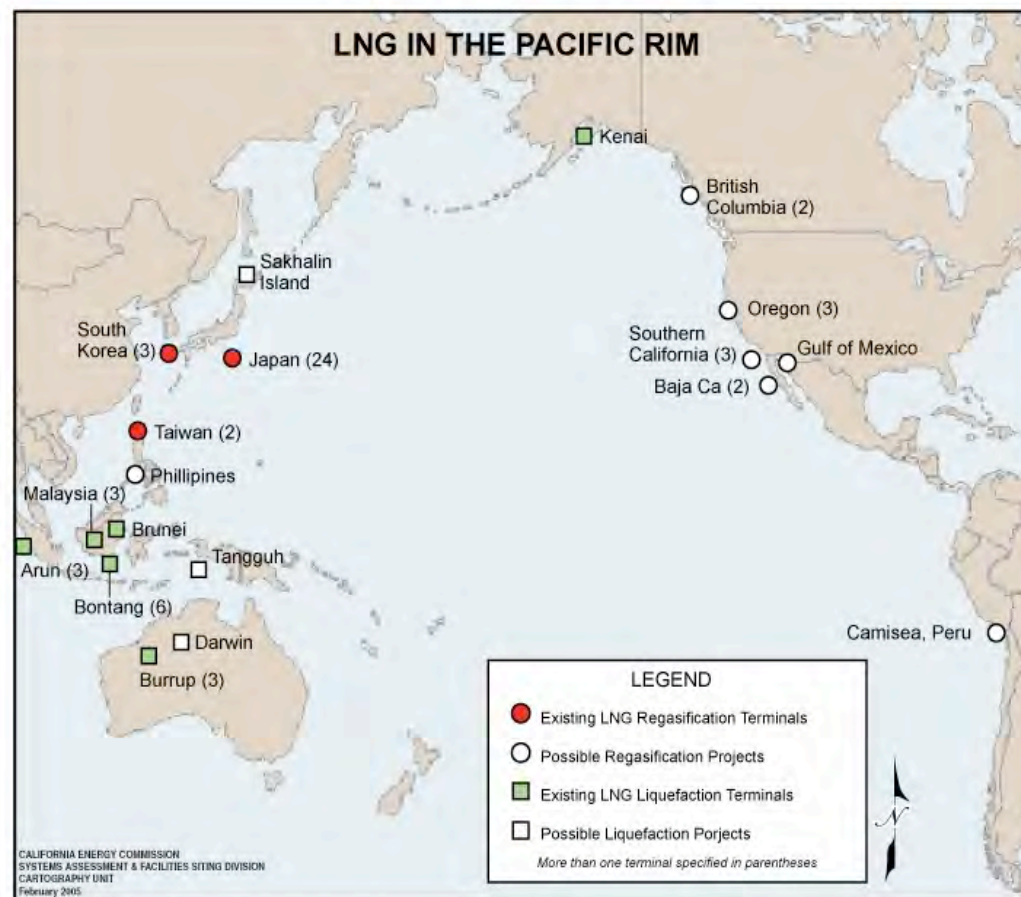


Why the Interest Lately in Liquefied Natural Gas?

- Canadian and Lower 48 states' gas production is not keeping pace with demand.
- Wellhead prices are rising.
- Market prices are high and volatile.
- LNG links US consumers to transoceanic gas supplies from many countries.



A West Coast LNG Import Terminal would enable California to access Pacific Rim supplies.



West Coast LNG Projects and Proposals

- Canada
 - Kitimat
 - WestPac
- Oregon
 - Port Westward
 - Northern Star
 - Skipanon
 - Jordon Cove



West Coast Projects (continued)

- California
 - Pacific Gateway
 - Cabrillo Deepwater Port
 - Clearwater Port
 - Long Beach
 - Ocean Way Terminal (recently announced)
- Mexico
 - Terminal GNL Mar Adentro de Baja California
 - Moss-Maritime Project
 - Energia Costa Azul LNG Facility (under construction)



California Governor Schwarzenegger's Direction

“California’s and the nation’s use of natural gas is growing beyond the ability of traditional natural gas resource areas to keep pace....

As options are explored, California must increase supply, increase in-state gas storage and enhance the State’s import capability to ensure reliable supply and stable prices.”



In addition, the Governor supports:

“Encouraging the construction of liquefied natural gas facilities and infrastructure and permit reviews coordinated with all entities to facilitate their development on the West Coast.”



2005 Integrated Energy Policy Report

“The health of California’s economy depends upon reliable, affordable, adequate, and environmentally-sound supplies of energy.”

November 2005



2005 Energy Report Findings and Conclusions

- No liquefied natural gas terminals are located on the west coast.
- The *2003 Energy Report* endorsed the need to develop LNG facilities to better serve the natural gas needs of the western U.S.
- The cost of delivering natural gas to the West Coast through a LNG project is expected to be well below the market prices that California currently pays at its borders.
 - For example, if market prices dropped by 50 cents per million British thermal units, Californians would save more than \$1 billion annually on their natural gas bills.



California Energy Policies

- Maximize energy efficiency
- Maximize cost effective renewable energy resources
- Support distributed energy resources
- Create new opportunities through research and development
- Increase infrastructure
- Diversify energy supply sources



Natural Gas Policies

- Increase energy efficiency efforts.
- Diversify sources of supply.
- Develop alternative supplies.
 - Biogas from agricultural operations
 - Landfill gas
 - In-state stranded gas
- Support molecules from LNG on West Coast.
- Support coordinated state response to applications.



LNG as an Option

- LNG is both:
 - A sources of molecules.
 - A type of infrastructure.
- LNG offers potential benefits and potential risks.



LNG as Infrastructure

- Industrial development.
- Potential environmental impacts.
- Potential public health and safety impacts.
- LNG is “new” to California.
- Public’s perception of safety and risk is the single largest issue.



Energy Commission Role in LNG Permitting

- Policy
- Coordination
- Public Information



Energy Commission Coordination

- LNG Interagency Working Group
 - 7 federal agencies
 - 14 state agencies
 - 4 local agencies
- Meets monthly
- Provides common information to all agencies



Energy Commission Public Information

- Website on energy, natural gas, and LNG
www.energy.ca.gov/lng
- Reports on natural gas and LNG safety
- Public workshops
- Public forums
- U.S. Department of Energy LNG forums



Governor's Decision on Offshore Projects

- Federal law allows Governor to:
 - Approve, approve with conditions, veto, or take no action.
 - Offshore projects only
- Energy Commission will provide information to Governor to support his decision.
- Governor's decision independent of agency permitting decisions.
- Energy Commission working with the U.S. Maritime Administration to ensure coordination.



Decision Coordination

Agency	Activity
U.S. Coast Guard and California State Lands Commission	Environmental Impact Statement (EIS) and Environmental Impact Report (EIR)
Federal Process	
U.S. Coast Guard and U.S. Maritime Administration	Federal Hearing/Decision on Deepwater Port License
Other Federal Agencies	U.S. Environmental Protection Agency air and water permits, etc.
Governor's Decision	
Governor's Decision	Approve, Approve With Conditions, Deny, or No Action (presumed approved)
State/Local Process	
California State Lands Commission	Certify Final EIR
	State Lands Hearing on Lease
California Coastal Commission	Federal Consistency
	Coastal Development Permit (CDP)
	Appeal of Local Government CDP
State Coastal Conservancy	Lease, if applicable
Local Government	CDP for shore crossing/onshore pipeline within coastal zone not retained by Coastal Commission.



LNG Business Climate

- Natural gas markets
- Governmental energy policies
- Regulatory structure
- Natural gas markets
 - Demand is slowly growing.
 - California already imports 87% of its supply.
 - Prices are volatile and increasing.
 - Market hubs are large and provide liquidity.



LNG Business Climate (continued)

- Governmental energy policies
 - Energy
 - Natural gas
- Regulatory structures
 - Permitting processes
 - Regulatory oversight
 - Public information



LNG Business Climate (continued)

- Permitting processes
 - LNG Interagency Working Group
 - Cooperative federal/state/local review (offshore)
 - Environmental issues well known
- Regulatory oversight
 - California Public Utilities Commission (CPUC) has established LNG receipt points
 - CPUC provides only limited oversight of terminal



LNG Business Climate (continued)

- Public information
 - Energy Commission website at [www.energy.ca.gov/lng]
 - U.S. Department of Energy LNG forums
 - Many reports



Upcoming Issues

- LNG trade
 - International trade issues—NAFTA, GATS, GATT
 - Natural gas quality/interchangeability
 - Third party terminal access
- California markets
 - Integration with natural gas storage
 - Integration with pipeline capacity contracts



Thank you



Pat Perez, Manager
Special Projects Office
pperez@energy.state.ca.us
916-654-4527

